National Institute of Environmental Health Sciences

# Fish and its multiple human health effects in times of threat to sustainability and affordability: Are there alternatives?

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**Year:** 2009
**Journal:** Asia Pacific Journal of Clinical Nutrition. 18 (4): 553-563

**Abstract:**

Fish (finfish or shellfish) has been classified as healthy by health professionals despite containing contaminants, since fish is high in long-chain n-3 polyunsaturated fatty acids which have multiple beneficial health effects such as decreased risk of stroke via anti-thrombotic and vasodilative effects, increased heart rate variability, reducing serum triacylglycerol and blood pressure, anti-inflammatory activities, improving visual function, improving attention-deficit conditions/hyperactivity disorder, schizophrenic and dementia; and may be effective in managing depression in adults. All these beneficial effects are thought to be mediated through altering cell membrane composition, fluidity, receptors and membrane-bound enzymes, gene expression and eicosanoid production. However, natural marine and freshwater fish populations are declining as a result of over-fishing, temperature and climate changes etc. To re-establish and maintain the fish population in China, fishing has been banned for 2-3 months during specified periods of the year, which differs depending on the area, since 1995. The fish population has recovered since implementation of these banned fishing periods, and thereby maintaining the sustainability and affordability of fish. Aquaculture products have had a significant contribution to China's food system, with significant increase in output over the past few decades, from one million tons in 1978 to 32 million tons in 2007. Aquaculture fish represents a higher portion of total aquatic products compared with natural marine and freshwater fish, which has only been achieved in China, and this has contributed greatly to food and health security. China's success in this area is a good model for other developing countries.

**Source:** http://apjcn.nhri.org.tw/server/APJCN/18/4/index.php

## Resource Description

**Exposure :** ☑

weather or climate related pathway by which climate change affects health

Food/Water Security

**Food/Water Security:** Fisheries

**Geographic Feature:** ☑

resource focuses on specific type of geography

Freshwater, Ocean/Coastal

**Geographic Location:** ☑

resource focuses on specific location

Non-United States

**Non-United States:** Asia

**Asian Region/Country:** China

**Health Co-Benefit/Co–Harm (Adaption/Mitigation):**

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

**Health Impact:**

specification of health effect or disease related to climate change exposure

General Health Impact

**Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

**Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

**Resource Type:**

format or standard characteristic of resource

Review

**Timescale:**

time period studied

Time Scale Unspecified